

A NEW SPECIES OF *SIDA* FROM AGRA, INDIA¹

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(With six text-figures)

Sida hemitropousa from Agra, India, has been described as a new species.

Examination of plant collection made at Agra, India, from 1992 to 1995 revealed the existence of a new species of *Sida*, which is confused with *S. acuta* Burm.f. The holotype is in the Kew Herbarium (vide ours 1508), identified by them as *S. acuta* (December 3, 1993).

Genus *Sida* Linn. Sp. Pl. 2:683, 1753; Gen. Pl. ed. 5, 306, 1754

Sida hemitropousa Pandeya sp. nov.

Perennial erect shrub upto 1.5 m; *leaves* simple, lanceolate, 2-4.5 x 1-1.3 cm, margins serrate, apex acute; *stem* brown, both stem and leaves minutely hairy; *lamina* bluish green; *petiole* 2-4.5 mm long; *stipules* linear, hairy, 0.8-1.2 cm; flowers 2-4 in axil of leaves; *pedicel* 2-4 mm, reddish brown; *bracteole* 0; *sepals* 5,

valvate, lower half connate, lobes 5, central vein purple, deltoid, caudate-acuminate, ciliate; *petals* 5, 5-8 mm across, 2-lobed, free above and connate below, adnate to the tube of stamens pale yellow; *staminal tube* divided at the summit into 20-32 anthers bearing filaments; *carpels* 5, *styles* 5, connate at lower half, *stigma* 5, longer than anther tube, capitate, 4 carpels abortive, only one develops one pendulous seed; *seed* dark brown, smooth; carpels with 2 small awns; anthers do not dehisce in many cases; after 4-5 hours (around 1300 hrs) petals curl in to close the flower.

Fruit: hemitropous, roundish; 50% flowers abortive.

Flowering: September to April (Fig. 1).
Local name not known.

Habitat: roadside and edges of gardens.

MAIN DIFFERENCES BETWEEN *SIDA ACUTA* AND *S. HEMITROPOUSA*

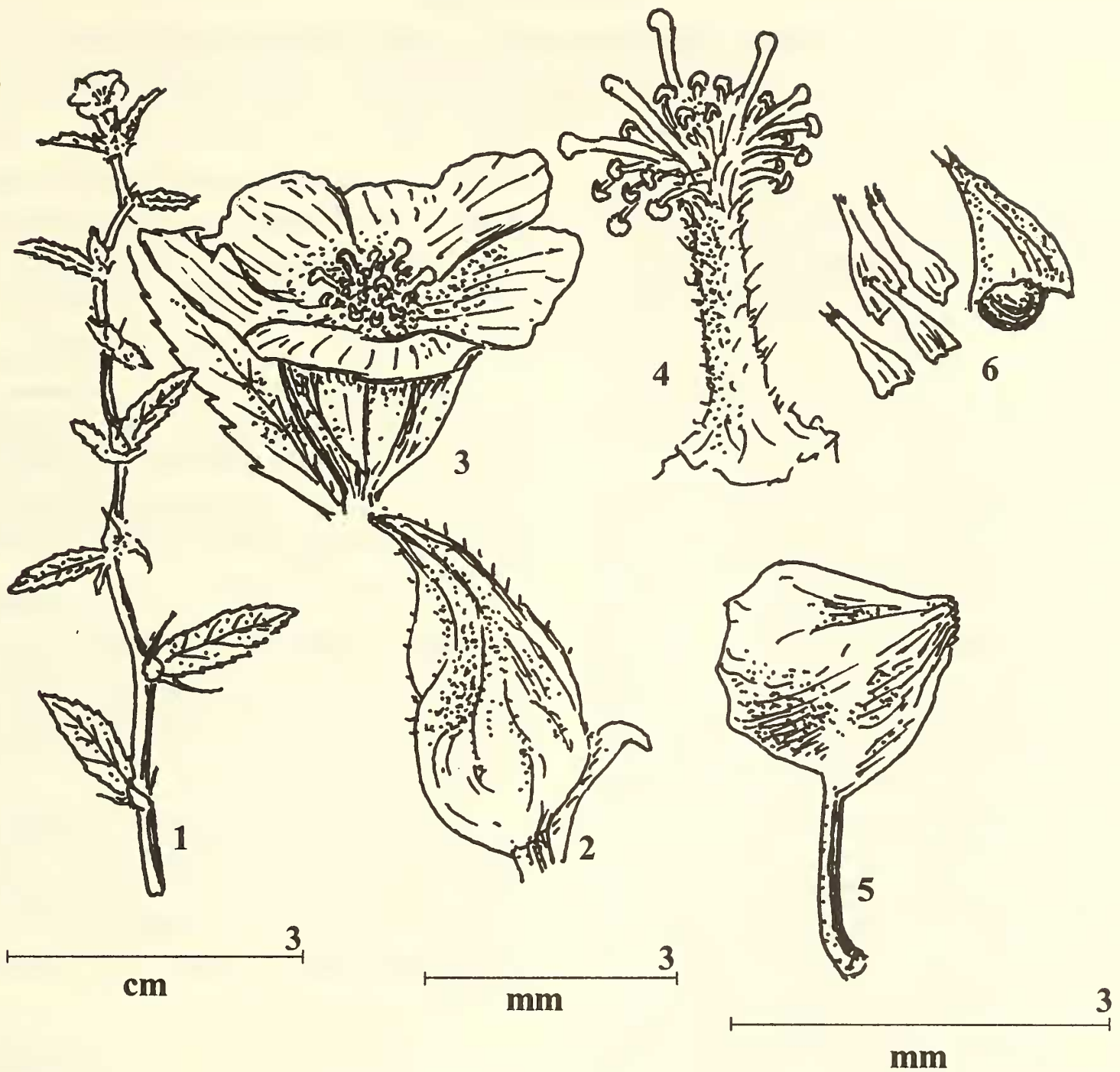
Characters	<i>Sida acuta</i>	<i>S. hemitropousa</i>
Habit	Spreading undershrub, 1 m	Erect undershrub, 1.5 m
Stem	Glabrous, olive green	Reddish brown, stellately hairy
Leaves	Elliptic-lanceolate, base obtuse, olive green, glabrous 2-6 x 2-4 cm	Lanceolate, dark green (bluish), minutely hairy, 2-4.5 x 1-1.3 cm
Petiole	3 - 6 mm	2 - 4.5 mm
Stipule	7 - 8 mm	8 - 12 mm
Flowers	Calyx 6-7 mm, petals 8-10 mm across; carpels 6, rugose, two aristate, 2 mm	Calyx 2-4 mm, lower half connate, petals 5-8 mm, carpels 5, 4 carpels abortive, carpels shortly (1 mm) 2-awned
Fruit	Schizocarp with awns pointing upwards in line with pedicels, 6 seeded, one in each mericarp	Hemitropous with small awns situated at right angles to pedicel, single seed only in upper carpel

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Distribution: Agra and its environs.
Characters which make it different from the allied species, viz., *Sida acuta*:



Figs. 1-6. *Sida hemitropous*: 1. A flowering shoot, 2. Flower bud, 3. Open flower in axil of leaf (2 and 3 of same magnification), 4. Styles longer than filaments, hence stigma protruding out of bunch of anthers, 5. Fruit hemitropous, roundish, 6. Carpels 5, (4, 5 and 6 of same magnification)

Sida hemitropous Pandeya sp. nov. affinis *S. acuta* Burm. f. Frutex caulibus 1.5 m alta; Cortice basi arbor; folia lanceolatus, serrato-pubescentibus, floris petala flavi-pubescentibus; stamina 20-32; Stigma 5, longa, stigma quam

stamina longior; Ovule 5, 4 abortive; fructo hemitropous, uno seminibus; 50% floris abortive; Floris September - April.

Etymology: The species has been named after hemitropous shape of the fruit.

REVIEWS

1. ADVANCES IN FISH AND WILDLIFE ECOLOGY AND BIOLOGY Vol. 1 Bansi Lal Kaul, Daya Publishing House, Delhi, 1996. pp i-xiii+332 (24.5 x 16 cm) ISBN 81 - 7035-156-1 Price Rs. 700/-

The book deals with the areas of Limnology, Fish and Wildlife ecology, as well as Biology. It marks the beginning of a series of such volumes that shall attempt to reflect the latest as well as original research work related to environmental issues which are gaining a lot of importance because of increased pressure on water and land resources due to proliferation of human population.

As an inaugural volume, the book has been dedicated to Prof. Y.R. Malhotra on his completion of 40 yrs. of teaching and research. This book includes articles from experts in different fields, many of whom have been students of Prof. Malhotra. The present volume, which is edited by Prof. Bansi Lal Kaul, contains an appreciation of Prof. Malhotra from Prof. P.L. Dua and is a compendium of original research articles contributed by 20 authors.

The book has two sections: Section I contains 21 articles under the heading "Fish and Limnology" and pertains to various topics like fish structure, fish food organisms, aquatic insects, feeding habits, reproduction, development and many other related topics on fish ecology and biology. Section II contains

8 contributions under the heading Wildlife. This section includes chapters on habitat studies, behaviour, management of wildlife, threat to wildlife and shrinking wetlands. Finally there is an Index of six pages.

The volume is an exhaustive collection of information in the fields specified. However, it is oriented towards specialised research findings and is more useful to researchers in pursuit of excellence. Most of the chapters, deal with specific observations in the Jammu and Kashmir area.

With the recent advances in printing technology, coloured photos and sketches could have been included in a few selected chapters, and such plates would have made the book more interesting and attractive visually, and useful even for general readers.

This is a sincere attempt to compile the recent knowledge in emerging fields which assume more importance because the very survival of mankind will be threatened if there is an indiscriminate pressure upon water and land resources.

V.V. SINGH

2. VERMICOLOGY - The Biology of Earthworms by Sultana A Ismail. 92 pp (21.5 x 13.7 cm) with 12 colour photos and many illustrations, Orient Longman Ltd. Hyderabad, 1997. Price: Rs. 75/-

With vermiculture being popular everywhere several books have come out in the market on this subject. VERMICOLOGY - THE BIOLOGY OF EARTHWORMS is one of them.

Out of 92 pages, 17 pages are devoted to the bibliography and 2 pages to a glossary. The book has nine chapters dealing with Ecological types of earthworms, their structure and life cycles. The chapter "earthworm for culture"

provides information on species used for vermiculture, their breeding and vermicompost.

The chapter "vermiculture and vermitech" will be of interest to the beginner, as it provides information on how to start vermiculture, preparation of vermibeds and effective time table for proper harvesting of vermicompost through the twin unit system of vermitech.

Subjects like the effect of earthworms on

plant growth, their use in vegetable growing and impact of chemicals on earthworms are dealt with in the chapter "Experiments from the field". The role of earthworms in agriculture is evident by some experiments mentioned in the chapter

"Earthworms: Their application in organic Agriculture." The book will be useful to all those who are interested in vermiculture.

NARESH CHATURVEDI

3. IMPACT OF DISEASES AND INSECT PESTS IN TROPICAL FORESTS

Edited by K.S.S. Nair, J.K. Sharma and R.V. Varma 1996. Kerala Forest Research Institute (KFRI) and Forestry Research Support Programme for Asia and the Pacific, pp 521 (24 x 17 cm). Price not stated.

The book is a compendium of papers presented at the symposium *Impact of Diseases and Insect Pests in Tropical Forests* organised by KFRI jointly with (IUFRO) International Union of Forestry Research Organisations and Forestry Research Support Programme for Asia and the Pacific.

The book is divided into two parts, each having 4 sections. Section I of the first part of the book deals with Impact of Diseases & Parasites on Productivity of Forest Trees and Bamboo Stands. A chapter provides information on impact of seed microflora on seed germination and seedling vigour of some important indigenous tree species of Kerala.

The management of disease is dealt under Section II. Information on Disease Epidemiology is given under Section III and Section IV is entitled Symbiotic Microbes in Relation to Disease.

Section I under Part 2 highlights the impact of Insect Pests on forest trees like teak, mahogany and *Ailanthus*. A chapter each deals with Borer pests, the threat to coastal forests of Bangladesh

and Threat to Mangrove Vegetation from Marine Wood boring and Fouling Organisms along the Indian Coast. In all there are 13 chapters in this Section. Information on Pest Management is given in Section II. The Biology, Ecology & Control of Insect Pests are given under Section III, having 14 chapters. Section IV on Problem Statements has nine chapters followed by Recommendations of the Symposium.

The papers published in this compendium include contributions from various countries i.e. Australia, Bangladesh, Canada, Cameroon, Fiji, Indonesia, Italy, Malaysia, Nepal, Norway, Pakistan, South Africa, Sri Lanka, United Kingdom, Vietnam and India. The book does not have an index which is a major shortcoming.

The book provides information not only on disease and insect pests of forestry but also their impact on productivity of the trees.

A valuable publication for all researchers associated with forest management.

NARESH CHATURVEDI

4. FLORA OF MAHARASHTRA Vol. I, M.R. Almeida. St. Xavier's College, Bombay-400 001. 1996. pp. i-lxxix, 1-294, i-xciv: (22 x 29 cm). Hard back Rs. 1000.00

The state of Maharashtra comprises a large part of the earlier Bombay state. This region is fortunate in having a variety of vegetation types, and consequently very rich flora. Some spots in the Western Ghats are centres of speciation, and many new taxa have been discovered from the

region of Mahabaleshwar, Khandala and other areas. The region also attracted good field botanists and taxonomists right from the nineteenth century. Among the main workers of this century at the Blatter Herbarium, the names of Fr. E. Blatter, Fr. H. Santapau, Prof. P.V. Bole

and more recently, Dr. S.M. Almeida are the foremost. These persons made a tradition of training dozens of men and women in painstaking field work and critical taxonomic studies. This training resulted also in building up of an excellent herbarium now called Blatter Herbarium in St. Xavier's College.

The present flora of Maharashtra and its author are both products of this institution and its tradition. Vol. I of Flora of Maharashtra deals with families Ranunculaceae to (actually) Staphyleaceae. Somehow on the cover page it reads Ranunculaceae to Connaraceae. Though the book can, in one sense, be said to be a revision of Cooke's FLORA OF BOMBAY PRESIDENCY, in reality it is much more. Many additional plants, localities, and other updated information make it a new work altogether.

The initial 80 pages deal with the area, its physiography, drainage, rainfall, climate, soil, vegetation, detailed history of botanising, floristics and methodology.

A critical analysis is given of genera not included in Cooke's Flora, nor in Santapau and Henry's DICTIONARY OF PLANT GENERA IN INDIA.

Many new taxa found by the author and his well known taxonomist wife Dr. S.M. Almeida are listed.

In the main text, the family accounts have indented keys to genera, and species, citations, synonymy, occasionally local names, brief description, flowering time and distribution. Nomenclature is good.

The descriptions are quite precise. The distribution has several new localities not recorded in Cooke's Flora or later works on district floras.

There are many line drawings or photographs to illustrate species and vegetation types. There is, however, inconsistency in providing scales to figures. Some have scale marking (plate 19, p. 2), many do not (foll. p. 4). Numbers on a few plates seem to have been added inadvertently, as most other plates have no numbers.

There is considerable anomaly in numbers of plates and photos, e.g. towards end of the book. Nos. 88-89 after p. 293 appear after 94-96 (p. 270). Some colour plates have no numbers (*Cissus*, *Eriolaena*). Others have a curious no. TP. (*Salacia*, *Sapindus*, etc.).

The quality of line drawings is good, but colour pictures vary from very good (No. 26, 32-35) to ordinary (*Cissus*, No. 17).

The book ends with a bibliography, and indices to scientific and local names and a one page Errata.

The use of Roman numbers for 79 pp. (i-lxxix) in the beginning and again 94 pp. (i-xciv) at the end is a little confusing.

The size of the book is rather large for frequent handling by students, but this will be compensated by a lesser total number of volumes.

The author and his wife deserve congratulations for this long awaited Flora of a botanically important state of India.

S.K. JAIN